REMARKS

Claims 1-4, 7, 9, 19, 20, 31, 32, and 50-52 are currently pending. The Amendment filed on May 16, 2011 has been entered.

Applicants respectfully request reconsideration in view of the following remarks. Issues raised by the Examiner will be addressed below in the order they appear in the prior Office Action.

Claims Rejected Under 35 U.S.C. § 112, First Paragraph – Written Description

Claims 1-4, 7, 9, 19, 20, 31, 32, and 50-52 remain rejected under 35 U.S.C. § 112, first paragraph, for allegedly failing to comply with the written description requirement for the introduction of new matter. Specifically, the Examiner alleges that the originally filed specification and claims do not provide support for the instant claims, i.e., a humanized antibody defined by the CDRs of SEQ ID NO: 10 (light chain) and SEQ ID NO: 18 (heavy chain). Applicants respectfully traverse for at least reasons listed below:

Disclosure of V_L and V_H sequences is sufficient to support full antibodies.

The Examiner asserts that the originally filed figures "disclose only the 1G4 V_L (SEQ ID NO: 10) and V_H (SEQ ID NO: 18) regions. They do not support full antibodies, comprising both a V and C region, defined only by the 3 CDRs (each) of the V_L and V_H regions." See page 2 of the Office Action. Applicants respectfully disagree.

Applicants submit that the written description requirement must be applied in the context of the particular invention in view of the state of the knowledge in the art at the time of filing. For example, MPEP 2163.II.A. 3(a), paragraph 7 states that:

> What is conventional or well known to one of ordinary skill in the art need not be disclosed in detail. See *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d at 1384,

231 USPQ at 94. >See also *Capon v. Eshhar*, 418 F.3d 1349, 1357, 76 USPQ2d 1078, 1085 (Fed. Cir. 2005).

Accordingly, Applicants submit that it is not necessary to specifically define or disclose sequences of constant regions within the heavy and light chain of the *1G4* antibody and of the antibodies having all six CDRs of *1G4*, as instantly claimed. At the time the instant application was filed, the general structure and engineering methods of antibodies were well-known in the art and routine. In particular, since at least as early as 1991, the framework and CDR sequences of an antibody could be unambiguously determined and assigned using the Kabat numbering system. *See*, e.g., Kabat *et al.* (1991) "Sequences of Proteins of Immunological Interest." NIH Publication No. 91-3242, U.S. Department of Health and Human Services, Bethesda, MD ("Kabat *et al.*" cited in the Office Action Responses of December 29, 2009, April 22, 2010 and May 16, 2011). One of ordinary skill in the art would understand from the common knowledge in the art that the variable regions, instead of the constant regions, determine the binding specificity of the antibody and that, by definition, the constant regions are much less variable, and thus "constant", among different antibodies with different antigen specificities. Therefore, with the disclosure of variable regions in the heavy and light chains of *1G4* antibody in the instant Figure 4, that skilled artisan would understand that Figure 4 fully supports a genus of full antibodies having the same variable regions and the same antigen specificity as *1G4*. Combining the instant disclosure of CDR3 sequences (e.g., at least in paragraph [0096] of the originally filed application) and the common knowledge in the art (e.g., Kabat et al.), that skilled artisan would easily identify all six CDR regions of the disclosed antibodies, e.g., *1G4*, and would understand that Figure 4 fully supports a genus of full antibodies binding to human DC-SIGN and having the same six CDRs as *1G4*.

Applicants show possession of the claimed invention in at least Figure 4.

The Examiner asserts that the Applicants' argument submitted in the previous response on May 16, 2011 "is true as far as it goes; but it does not demonstrate that Applicant [*sic*] was in possession of, or even envisioned, a genus of antibodies defined only by the 6 CDRs of the 1G4 antibody." See page 3 of the Office Action. Applicants respectfully disagree.

Applicants submit that drawings of the instant application, e.g., Figure 4, should be taken into account for the consideration of the written description requirement. MPEP 2163.II.A.3(a), paragraph 3 states that:

> An applicant may show possession of an invention by disclosure of ***drawings*** or ***structural chemical formulas*** that are sufficiently detailed to show that applicant was in possession of the claimed invention as a whole. See, e.g., Vas-Cath, 935 F.2d at 1565, 19 USPQ2d at 1118 ("drawings alone may provide a 'written description' of an invention as required by Sec. 112*"); In re Wolfensperger, 302 F.2d 950, 133 USPQ 537 (CCPA 1962) (the drawings of applicant's specification provided sufficient written descriptive support for the claim limitation at issue); Autogiro Co. of America v. United States, 384 F.2d 391, 398, 155 USPQ 697, 703 (Ct. Cl. 1967) ("In those instances where a visual representation can flesh out words, drawings may be used in the same manner and with the same limitations as the specification."); Eli Lilly, 119 F.3d at 1568, 43 USPQ2d at 1406 ("In claims involving chemical materials, generic formulae usually indicate with specificity what the generic claims encompass. One skilled in the art can distinguish such a formula from others and can identify many of the species that the claims encompass. Accordingly, such a formula is normally an adequate description of the claimed genus."). (emphases added)

Thus, as discussed above, both M.P.E.P. and case law support that Applicants show, in at least Figure 4, the possession of a genus of full antibodies recognizing human DC-SIGN and having the same CDR regions as *1G4*. Applicants further cite MPEP 2163.I, paragraph 3 as follows:

> Possession may be shown in a variety of ways including description of ***an actual reduction to practice***, or by showing that ***the invention was "ready for patenting" such as by the disclosure of drawings*** or ***structural chemical formulas that show that the invention was complete***, or by describing distinguishing identifying characteristics sufficient to show that the applicant was in possession of the claimed invention. (emphasis added)

As described in the examples of the instant disclosure, Applicants used a genetic screening assay to identify several novel DC-SIGN antibodies from mouse IgG1 and IgG2a libraries (see, e.g., paragraphs [0083]-[0094] of the published application). The specification clearly provides the unique light chain (i.e., Figures 4a and 4c) and heavy chain (i.e., Figures 4b and 4c) amino acid

sequences of mouse antibodies that specifically bind to human DC-SIGN (see, e.g., paragraphs [0026], [0093], and [0094] of the published application). In particular, the specification provides the light chain (see, e.g., SEQ ID NO:10 of Figure 4a) and heavy chain (see, e.g., SEQ ID NO:18 of Figure 4b) amino acid sequences of the mouse DC-SIGN antibody *1G4*. Therefore, according to M.P.E.P, the originally filed application clearly describes an actual reduction to practice of several novel DC-SIGN antibodies, including *1G4*.

Furthermore, Applicants submit that the instant Figure 4 discloses the variable region sequences, thus including all six CDRs, of several novel DC-SIGN antibodies, including *1G4*. In addition, the originally filed application not only teaches that the instant invention includes humanized antibodies but also teaches the practical methods and rationales to select CDR domains for the humanization process. See paragraphs [0036] to [0039]. Specifically, the application teaches that "in one embodiment, the antibody includes **one or more CDR domains** of the antibody." (emphasis added) See paragraph [0038]. The application further exemplifies this by the disclosure of the CDR3 sequences of several antibodies, including *1G4*. See paragraphs [0038], [0094] and [0095]. Therefore, by at least these disclosures in the originally filed specification and drawings, Applicants clearly show the possession of the instant invention by the disclosure of "drawings or structural chemical formulas that show that the invention was complete" and show that the instant invention was "ready for patenting".

Therefore, for at least reasons listed above, Applicants are fully supported by M.P.E.P. and case law to show possession of the instant invention.

Disclosure is sufficient even without a separate label.

The Examiner alleges that "[a]pplicant essentially admits that the specification does **not** disclose the CDR1s and CDR2s of the antibody defined by SEQ ID NO: 10 (light chain) and SEQ ID NO: 18 (heavy chain). It is then unclear how Applicant can convincingly argue that Applicant was in possession of, or even envisioned, a genus of antibodies defined by only the 6 CDRs of the 1G4 antibody." (emphasis in original) Applicants respectfully disagree.

As discussed above, Applicants show, in the originally filed application, clear possession of the instant invention by disclosing: 1) the variable region sequences, including full sequences of all six CDRs, of several antibodies recognizing human DC-SIGN, including *1G4*; 2) the exemplary CDR3 sequences of those antibodies of the IgG1 subgroup; and 3) a genus of antibodies comprising **one or more CDR domains** of those antibodies disclosed in the IgG1 subgroup. Applicants submit that even without separately listing the CDR1 and CDR2 sequences of the disclosed antibodies in the IgG1 subgroup and assigning them with SEQ ID NOs, these sequences are clearly defined in the instant application and completely disclosed in at least Figure 4. Indeed, from the instant disclosures listed above, combined with the fact that Applicants teach all CDR sequences of antibodies in the IgG2a subgroup and exemplify the CDR3 sequences of antibodies in the IgG1 subgroup, including *1G4*, one person of ordinary skill in the art would have understood that Applicants clearly show the possession of the instant invention.

In view of the above remarks, Applicants submit that the currently pending claims do not introduce new matter. Furthermore, Applicants assert that one of skill in the art would have understood that the application clearly supports the pending claims and that Applicants were in possession of the claimed invention. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

CONCLUSION

In view of the above remarks, Applicants believe the pending application is in condition for allowance. The Examiner may address any questions raised by this submission to the undersigned at 617-951-7000.

Applicants believe no fees are due with the response other than those specifically authorized in connection with this filing. However, should an extension of time be required or any fees be required for timely consideration of this submission, Applicants hereby petition for such extension and request that the extension fee and any other fee required for timely consideration of this submission be charged to Deposit Account No. 18-1945, from which the undersigned is authorized to draw under Order No. ALEX-P01-112.

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Respectfully submitted,

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